



Practical interventions to support pollinators in solar parks

Clean energy, thriving landscapes

Solar photovoltaic (PV) is expanding rapidly across Europe, with much of this growth coming from ground-mounted solar parks. These sites now cover large areas of land and their footprint will continue to grow in the coming years.

At the same time, **pollinators** such as bees, butterflies and hoverflies are in decline due to habitat loss, intensive farming and agrochemical use, putting both biodiversity and food production at risk.

If poorly managed, solar parks may reduce habitat diversity, fragment ecosystems and limit resources for pollinators. But **when designed and managed with biodiversity in mind**, they can have the opposite effect. For farmers, this means **solar parks can serve two purposes at once**: generating renewable energy and providing a refuge for pollinators that also support crop production.

Ten evidence-based recommendations

How to manage solar parks for pollinator biodiversity

Pollinators play a crucial role in agriculture, influencing not only the quantity of crops, but also their quality and stability. Effective pollination sustains wild plant populations and biodiversity, including native and protected species.

Based on scientific evidence reviewed in Opportunities to enhance pollinator biodiversity in solar parks (Blaydes et al., 2021), here are **ten practical interventions to guide solar park management**, organised into five key themes.



Foraging resources

1. Provide a diverse mix of key flowering plant species

Sowing wildflower meadows or strips with nectar- and pollen-rich species offers **key food sources for pollinators**. Diversity matters, but the most effective results come from including locally adapted species suited to the site and to target pollinator communities. **Open, sunny margins are ideal locations** where flowering plants can thrive without interfering with machinery.

2. Plant or maintain hedgerows at site boundaries

Hedgerows **supply food, shelter, breeding sites and movement corridors** for pollinators. A mix of woody and herbaceous species provides seasonal resources and varied microclimates. To maximise benefits, **manage hedgerows at low intensity**: less frequent or incremental cutting (preferably in winter) supports richer pollinator communities.

3. Ensure season-long access to foraging resources

Pollinators need continuous access to resources. Therefore, seed mixes should include **plant species that flower at different points** throughout the season. Late-flowering plants are particularly beneficial to avoid periods of nutritional deficit in late summer.



Reproductive resources

4. Provide a range of nesting and breeding habitats

Solar farms can host **tussocky grass, sparse vegetation, banks or ditches**, which are valuable features for nesting, breeding and reproduction. Adding host plants for specific species can bring further benefits, but they must match ecological needs. Margins are the best places to establish these features, as they are cut less frequently and offer **safe egg-laying sites**.



Site management

5. Graze, cut or mow at low intensity and late in the season

Delaying mowing or grazing allows plants to flower and set seed, **ensuring food resources for pollinators throughout summer**. Vegetation must be kept low enough to avoid shading panels, but cutting can be limited to strips directly around them. Where grazing is needed, late-season or rotational practices help maintain both plant diversity and resources.



6. Create variation in vegetation structure

A mosaic of tall and short plants **benefits a wide range of pollinators**. Taller vegetation is particularly valuable for butterflies, while shorter areas keep the site manageable. Leaving some patches unmown or ungrazed, and strip mowing near panels, creates structural diversity across the site.

7. Minimise the use of agrochemicals

Reducing fertilisers and herbicides helps protect pollinators, **lowers management costs and maintains floral diversity**. Avoid herbicides where possible; if essential, use spot treatments or mechanical removal instead of broad spraying.



Landscape

8. Prioritise pollinator-friendly management in intensive farmland

Because pollinators move beyond solar park boundaries, **management is most effective where surrounding landscapes are poor in resources**. In these settings, solar parks can act as habitat islands, supporting pollinator populations and even boosting yields in nearby crops.

9. Promote connectivity to semi-natural habitat

Hedgerows, wildflower strips or uncultivated field margins can link solar parks with surrounding semi-natural habitats. These corridors turn solar parks into stepping stones across the landscape, **helping pollinators move** between otherwise isolated habitats.



Climate

10. Generate a range of microclimates

Solar panels naturally generate different thermal conditions. Adding features such as tall vegetation or hedgerows can increase this variation, offering warmer microclimates and shelter to **help pollinators cope with extreme weather** and climate change.

